DATA SHEET

DXLink™ Multi-Format Transmitter Module

AVB-TX-MULTI-DXLINK (FG1010-310)

Overview

The DXLink Multi-Format Transmitter sends analog and digital audio and video signals including HDMI with HDCP, control, and Ethernet up to 100 meters over one standard twisted pair cable. Use the DXLink Transmitter with the Enova DGX DXLink Twisted Pair Input Boards or compatible Enova DVX All-In-One Presentation Switchers. The DXLink Transmitter can also be used as a point-to-point solution with a DXLink HDMI Receiver. The DXLink Transmitter can be powered from any DXLink power source such as the Enova DGX DXLink Twisted Pair Input Board, Enova DVX-3155HD, DVX-3156HD, DVX-2155HD, PS-POE-AT-TC or PDXL-2. It also includes a local power supply. The transmitter features both a multi-format analog port to support legacy devices and an HDMI port to support newer digital devices.

COMMON APPLICATIONS

The DXLink Multi-Format Transmitter sends analog or digital video, audio and control to a remote display across the room, on the other side of the house or to a classroom down the hall. The transmitter's built-in control ports can be used to control a source and the ICSLan port provides an IP access point.

FEATURES

- **Only One Cable** – Send audio and video while passing control, Ethernet, USB signals and power
- **Native NetLinx® Control Everywhere** – Control connected source and display devices using the built-in IR and RS-232 ports
- **Send HDMI signals up to 100 meters** – Extend the reach of the HDMI signals far beyond the capabilities of typical HDMI cabling
- **Multi-Format Analog Port and HDMI Port** – Supports legacy analog signals - RGBHV, Component, S-video, and Composite, and digital HDMI/HDCP, DisplayPort and DVI signals
- **Standard Twisted Pair Cable** – Save time and effort in installation by leveraging pre-existing cost effective twisted pair cable, see the Cabling for Success with DXLink white paper for more details

DEALER BENEFITS

- **HDMI/HDCP with the Simplicity of Analog** - Hassle-free plug-and-play operation eliminates the need for time consuming, cumbersome work-around tools to deal with HDCP key constraints and resolution incompatibilities
- **Simplified Design and Installation** - Audio, video, control, Ethernet and power are distributed over one twisted pair cable speeding up installation at remote endpoints
- **Reduce Network Drops** - Centralized Ethernet communication from the Enova DGX can be implemented with the ICSLan port - providing IP access points at every DXLink Transmitter and Receiver

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CUSTOMER BENEFITS

- **Interruption-Free Content** - Exclusive InstaGate Pro® Technology allows audio and video to be switched quickly and easily to every connected display without the difficulties typically associated with HDCP
- **Audio, Video and Control Everywhere** - Compact low-profile design and remote powering capabilities allows the transmitter to be installed in discreet locations out of sight without additional wiring

ADDITIONAL FEATURES

- **Powered Remotely** - Power over DXLink* is carried over one twisted pair cable to simplify installation when used with a Enova DGX, Enova DVX, PS-POE-AT-TC or PDXL-2
- **3D Support** - Pass through latest video formats including 3D and Deep Color
- **Surround Sound Support** - Pass through high definition surround sound including Dolby Digital, DTS and up to 8-channel L-PCM at 32 kHz, 44.1 kHz, 48 kHz, 96 kHz, 192kHz
- **Ethernet Connectivity** - Provides ICSLan Ethernet support at the Transmitter - add Ethernet connectivity to a Touch Panel, plug in a WAP or stream IP audio/video to a Ethernet enabled source device
- **HDCP compliant**

* Power must be supplied by one of the following DXLink Power sourcing devices: Enova DGX 8/16/32/64 Digital Media Switcher (with a DXLink Twisted Pair Input Board installed), Compatible Enova DVX All-In-One Presentation Switcher (3155HD, 3156HD or 2155HD), PS-POE-AT-TC High Power PoE Injector or PDXL-2 Power over DXLink Controller. AMX only supports the use of these approved Power over DXLink solutions. Other third party power supplies or non-compatible standard PoE solutions may damage the DXLink equipment.

SPECIFICATIONS

GENERAL	
Dimensions (HWD)	1” x 8 3/4” x 5 1/5” (2.54 x 22.12 cm x 13.08 cm)
Weight	Approx. 1.1 lb (0.50 kg) Shipping Weight: Approx. 2.20 lb (1.00 kg)
Mounting Options	Compatible with all V Style versatile mounting options including rack, surface or pole
Advanced Configuration Interface	USB Mini-B Connector
Transport Layer Throughput (Max)	10.2 Gbps
Compatible AMX Products	•Enova DGX 8/16/32/64 Digital Media Switchers •Enova DVX-3155HD, DVX-3156HD and 2155HD All-In-One Presentation Switchers •DXLink HDMI RX as a point-to-point solution •PS-POE-AT-TC High Power PoE Injector •PDXL-2 Power over DXLink Controller
Twisted Pair Cable Type	Shielded Cat6, Cat6A and Cat7 **DXLink twisted pair cable runs for DXLink equipment shall only be run within a common building where a common building is defined as: the walls of the structure(s) are physically connected and the structure(s) share a single ground reference** For more details and helpful cabling information, reference the white paper titled Cabling for Success with DXLink, or contact your AMX representative
Twisted Pair Cable Length	Up to 328 ft (100 m)
MTBF	381,000 hours
Approvals	CE, FCC, UL, cUL, RoHS / WEEE Compliant
Included Accessories	Each HDMI RX ships with a desktop power supply (ENERGY STAR® qualified) with power cord
Optional Accessories	AVB-VSTYLE-SURFACE-MNT, V Style Module Surface Mount (FG1010-722) AVB-VSTYLE-RMK-1U, V Style Module Tray (FG1010-720) AVB-VSTYLE-RMK-FILL-1U, V Style Module Tray w/fill

	Plates (FG1010-721) AVB-VSTYLE-POLE-MNT, V Style Module Pole Mount (FG1010-723) CC-NIRC, NetLinx IR Emitter Cable (FG10-000-11) IR03, External IR Receiver Module (FG-IR03) •PS-POE-AT-TC High Power PoE Injector (FG423-84) •PDXL-2 Power over DXLink Controller (FG1090-170)

ACTIVE POWER REQUIREMENTS	
AC Power	100-240 VAC single phase, 50-60 Hz 0.6 A @ 115 VAC max
Power Consumption (Max)	Local 12V supplied: 10 W Power over DXLink supplied: 10 W
DXLink Power	Power can also be supplied by a DXLink Power sourcing device such as: •Enova DGX 8/16/32/64 Digital Media Switcher (with a DXLink Twisted Pair Input Board installed) •Compatible Enova DVX All-In-One Presentation Switcher (3155HD, 3156HD or 2155HD) •PS-POE-AT-TC High Power PoE Injector •PDXL-2 Power over DXLink Controller When installed in conjunction with an Enova DGX use the Enova DGX Configuration Tool located at AMX.com/enova to determine the power requirements of the configuration **AMX only supports the use of these approved Power over DXLink solutions. Other third party power supplies or non-compatible standard PoE solutions may damage the DXLink equipment.**
Power Connector	2.1 mm DC Power Jack (for optional local DC power) DXLink Power connector is included on DXLink connection
Power Consumption (Max)	Power over DXLink supplied: 7 W

POWER SUPPLY	
External, Included	Each Multi-Format TX ships with a desktop power supply (ENERGY STAR® qualified) with power cord
External, Optional	Power can also be supplied by a DXLink Power sourcing device such as: •Enova DGX 8/16/32/64 Digital Media Switcher (with a DXLink Twisted Pair Input Board installed) •Compatible Enova DVX All-In-One Presentation Switcher (3155HD, 3156HD or 2155HD) •PS-POE-AT-TC High Power PoE Injector •PDXL-2 Power over DXLink Controller When installed in conjunction with an Enova DGX use the Enova DGX Configuration Tool located at AMX.com/enova to determine the power requirements of the configuration **AMX only supports the use of these approved Power over DXLink solutions. Other third party power supplies or non-compatible standard PoE solutions may damage the DXLink equipment.**

ENVIRONMENTAL	
Temperature (Operating)	32° to 104° F (0° to 40° C)
Temperature (Storage)	-22° to 158° F (-30° to 70° C)
Humidity (Operating)	5% to 85% RH (non-condensing)
Humidity (Storage)	0% to 90% RH (non-condensing)
Power Dissipation (Max)	Local 12V supplied: 34 BTU/HR Power over DXLink supplied: 34 BTU/HR

FRONT CONNECTORS	
Advanced Configuration Interface	USB Mini-B Connector

BACK CONNECTORS	
Video Input	HD-15 (RGBHV, RGBs, RGsB, Y/Pb/Pr, Y/c / S-Video, composite (breakout cable is required for non RGBHV formats)
HDMI Input	HDMI Type A Female
Analog Stereo Input	3.5mm Mini-Stereo Jack
S/PDIF Digital Audio Input	RCA Jack
ICS LAN/Ethernet Port	RJ-45 Connector, TCP/IP Port (ICS LAN 10/100)
Serial	3.5mm Pluggable Phoenix Terminal Block Bidirectional RS-232 Standard NetLinx Baudrate 1200-115k Parity support Odd/Even/None
IR RX	3.5mm Mini-Stereo Jack Port for IR03 Receiver (Optional)
IR TX	3.5mm Pluggable Phoenix Terminal Block Port for IR01 Emitter (Optional)
USB (HID) Keyboard & Mouse*	USB Type B Connector
DXLink Output	RJ-45
Local Power	2.1 mm DC Power Jack

* This feature will be available upon release of a future firmware update

CONTROLS & INDICATORS	
ID Pushbutton	Toggle between DHCP and static IP addressing Places system in NetLinx Device ID assignment mode Reset the factory default settings Restore the factory firmware image
Power Indicator	Green indicates whether or not the module is powered on
Digital Video Indicator	Green LED indicates the presence of video signals through the module
Audio Indicator	Green LED indicates the presence of audio signals through the module
Analog Video Indicator	3 Green LEDs, 1 lights to indicate the presence of the type of analog video through the Multi-Format TX (composite, Y/c; Y/Pb/Pr or RGB; RGBHV or RGBS)
IR TX Indicator	Red LED lights during the transmission of IR data via the rear IR port
IR RX Indicator	Yellow LED lights during the receipt of IR data via the rear IR port
RS-232 TX Indicator	Red LED shows serial transmit (TX) data activity
RS-232 RX Indicator	Yellow LED shows serial receive (RX) data activity
LINK/ACT	Green LED lights when the Ethernet cable is connected and an active link is established. This LED also blinks when receiving Ethernet data packets

Status	Green LED lights when the Controller is programmed and communicating properly
CEC Indicator	Not currently supported
USB Indicator	Not currently supported

HDMI	
Compatible Formats	HDMI, HDCP , DVI
Input Signal Type	HDMI DVI-D (Single Link With Cable Adapter) DisplayPort ++ (Input Only, With HDMI Cable Adapter)
Input Connector	HDMI Type A Female
Propagation Delay (Typ)	5 us
Input Voltage (Nominal)	1.0 Vpp Differential
Input Re-clocking (CDR)	Yes
Input Equalization	Yes, Adaptive
Data Rate (Max)	4.95 Gbps / 6.75 Gbps 6.75 Gbps supported when the HDMI DXLink RX Scaler is in Bypass mode and format is 1080p60 or less
Pixel Clock (Max)	165 MHz / 225 MHz 225 MHz supported when the HDMI DXLink RX Scaler is in Bypass mode and format is 1080p60 or less
Progressive Resolution Support	480p up to 1920x1200 @ 60 Hz (including but not limited to those resolutions shown in the DXLink Twisted Pair Transmitters/Receiver Instruction Manual
Interlaced Resolution Support	480i, 576i, 1080i (including but not limited to those resolutions shown in the DXLink Twisted Pair Transmitters/Receiver Instruction Manual Note-Reminder: Interlace video supported into the Transmitter, progressive only supported out of the Receiver unless in non-scaling Bypass
Deep Color Support	24-bit, 30-bit, 36-bit 30-bit and 36-bit supported when the HDMI DXLink RX Scaler is in Bypass mode and format is 1080p60 or less
Color Space Support	RGB 4:4:4 YCbCr 4:4:4 and 4:2:2 (Input signal support for YCbCr 4:4:4 and 4:2:2, output color-space is converted to RGB 4:4:4)
3D Format Support	Yes (HDMI Primary Formats) Frame Packing 1080p up to 24Hz Frame Packing 720p up to 50/60Hz Frame Packing 1080i up to 50/60Hz Top-Bottom 1080p up to 24Hz Top-Bottom 720p up to 50/60Hz Side-by-Side Half 1080p up to 50/60Hz Side-by-Side Half 720p up to 50/60Hz 3D supported when the HDMI DXLink RX Scaler is in Bypass mode and format is 1080p60 or less
Audio Format Support	Dolby TrueHD*, Dolby Digital, DTS-HD Master Audio*, DTS, 2 CH through 8 CH L-PCM Dolby Digital and DTS support up to 48kHz, 5.1 channels
Audio Resolution	16 bit to 24 bit
Audio Sample Rate	32 kHz, 44.1 kHz, 48 kHz, 96 kHz, 192kHz
Local Audio Support	Yes for audio insertion

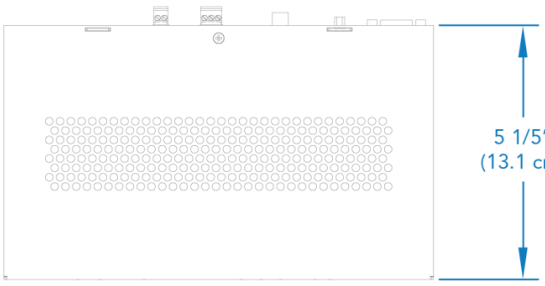
HDCP Support	Yes Supports AMX HDCP InstaGate Pro Technology When used with an AMX Digital Media Switcher the key support is up to 16 sinks per output, independent of source device When used as a single point-to-point solution the key support is defined by the source device
CEC Support	None
DDC/EDID Support	EDID in point-to-point mode is passed up from the sink Device When used with Enova DGX 8/16/32/64 Digital Media Switcher the EDID is read from the switcher and presented to the source through the TX on the digital HDMI connector only, See the Enova DGX DXLink Twisted Pair Input Board specifications for the specific EDID list The digital video input (HDMI) EDID is user re programmable via the switcher The analog video input EDID is fixed

ANALOG VIDEO	
Compatible Formats	RGBHV, RGBs, RGsB YPbPr (HDTV) Y/c (S-Video), C (Composite)
Progressive Resolution Support	480p up to 1920x1200 @ 60 Hz including but not limited to those resolutions shown in the DXLink Twisted Pair Transmitters/Receiver Instruction Manual
Interlaced Resolution Support	480i, 576i, 1080i including but not limited to those resolutions shown in the DXLink Twisted Pair Transmitters/Receiver Instruction Manual. If input is interlaced, all scaled outputs will deinterlace video to a progressive resolution format. If in scaler Bypass mode interlaced input will pass through
Auto-Adjust Input	Supported
RGB Input Signal Level Range	1 Vpp nominal
RGB Input Impedance	75 Ω
HV Sync Input Signal Level Range	2 to 5 Vpp
HV Sync Input Impedance	2.5 pF Typ, 10 pF Max
Digital Processing	24 bit, 165 MHz
Y/Pb/Pr Input Signal Level Range	1.0 Vpp for Y, 700 mVpp for Pb Pr
Y/Pb/Pr Input Impedance	75 Ω
Y/c (S-Video) Input Signal Level Range	1.0 Vpp for Y, 1.0 Vpp for c
Y/c (S-Video) Input Impedance	75 Ω
C (Composite) Input Signal Level Range	1.0 Vpp
C (Composite) Input Impedance	75 Ω
Input Connector	HD-15 (Breakout cable required for non RGBHV formats)

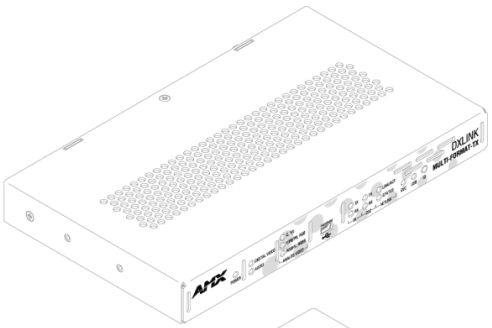
AUDIO (ANALOG & DIGITAL S/PDIF)	
Input Signal Types	Stereo Analog, S/PDIF Video signal must be present to pass Audio
Analog Input Level (Max)	+2 dBu, unbalanced
Analog Input Impedance	10k Ω

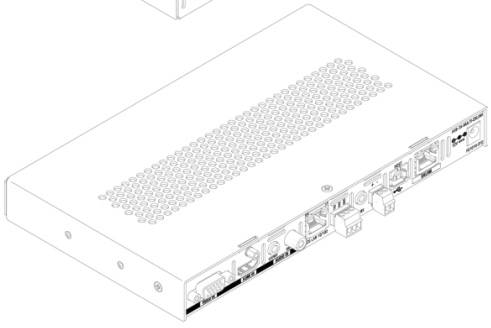
Analog to Digital Conversion	48 kHz Sample Rate, 24-bit
S/PDIF Audio Format Support	Dolby Digital, DTS, 2 CH L-PCM Dolby Digital and DTS support up to 48kHz, 5.1 channels
S/PDIF Resolution	16 to 24 bit
S/PDIF Sample Rate	32 kHz, 44.1 kHz, 48 kHz, 96 kHz
S/PDIF Input Signal Level Range	200 mVpp to 600mVpp terminated
S/PDIF Input Impedance	75 Ω
Analog to Digital Reference Level	+2.5 dBu = 0 dBfs
Input Connectors	3.5mm Mini-Stereo Jack (Analog Stereo) RCA Jack (S/PDIF)

For a more detailed pictorial drawing please visit: http://www.amx.com//assets/drawings/95-1010-310_B.pdf

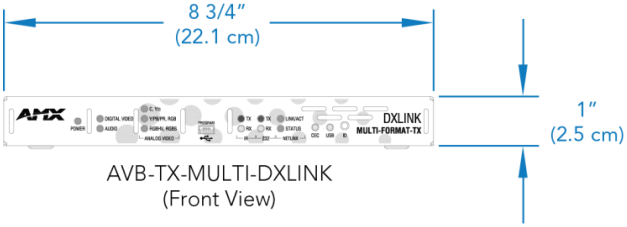


AVB-TX-MULTI-DXLINK
(Top View)





AVB-TX-MULTI-DXLINK
(Isometric Views)



AVB-TX-MULTI-DXLINK
(Front View)

AVB-TX-MULTI-DXLINK
(Back View)

AVB-TX-MULTI-DXLINK
(Right View)

About AMX

AMX hardware and software solutions simplify the implementation, maintenance, and use of technology to create effective environments. With the increasing number of technologies and operating platforms at work and home, AMX solves the complexity of managing this technology with reliable, consistent and scalable systems. Our award-winning products span control and automation, system-wide switching and audio/video signal distribution, digital signage and technology management. They are implemented worldwide in conference rooms, homes, classrooms, network operation / command centers, hotels, entertainment venues, broadcast facilities, and more. ©2013 AMX. All rights reserved.

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